WHAT IS CLAIMED IS

1. A process for surface treatment of a hollow work having a hole communicating with the outside comprising the steps of placing the work and a fine metal powder producing material into a treating vessel, and bringing said fine metal powder producing material into flowing contact with the surface of said work in said treating vessel, thereby adhering a fine metal powder produced from said fine metal powder producing material to the surface of said work.

2. A surface treatment process according to claim 1, wherein the flowing contact of said fine metal powder producing material with the surface of said hollow work is achieved by rotating said treating vessel.

3. A surface treatment process according to claim 2, wherein said treating vessel is cylindrical in shape, and the flowing contact of said fine metal powder producing material with the surface of said hollow work is achieved by rotating said cylindrical treating vessel about its center axis.

4. A surface treatment process according to claim 1, wherein said hollow work having the hole communicating with the outside is a ring-shaped work.

5. A surface treatment process according to claim 4, wherein said ring-shaped work is placed into said cylindrical treating vessel, so that its center axis is parallel to a center axis of said cylindrical treating vessel, and the flowing contact of said fine metal powder producing material with the surface

of said ring-shaped work is achieved by rotating said cylindrical treating vessel about its center axis.

6. A surface treatment process according to claim 5, wherein a rod-shaped member is inserted through and disposed in the through-hole in said ring-shaped work, so that it is parallel to the center axis of said ring-shaped work.

7. A surface treatment process according to claim 4, wherein said ring-shaped work is a ring-shaped rare earth metal-based permanent magnet.

8. A surface treatment process according to claim 7, wherein said ring-shaped rare earth metal-based permanent magnet is a ring-shaped bonded magnet.

9. A surface treatment process according to claim 1, wherein said fine metal powder producing material is a material for producing a fine powder of at least one metal selected from the group consisting of Cu, Fe, Ni, Co, Cr, Sn, Zn, Pb, Cd, In, Au, Ag and Al.

10. A surface treatment process according to claim 9, wherein said fine metal powder producing material is a fine Cu powder producing material.

11. A ring-shaped bonded magnet having a film layer made of a fine metal powder on the entire surface thereof, which is produced by a surface treating process according to claim 1.

12. A ring-shaped bonded magnet according to claim 11, wherein said ring-shaped bonded magnet having the film layer made of the fine metal powder on the entire surface thereof has an L/D

value equal to or larger than 1, wherein L represents a length of said magnet in a direction of a center axis of said magnet, and D represents an inside diameter of said magnet.

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13. A ring-shaped bonded magnet having a plated film, which is produced by subjecting a ring-shaped bonded magnet having a film layer made of a fine metal powder on the entire surface thereof according to claim 11 or 12 to an electroplating treatment.